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Invention: INTRAMEDULLARY NAIL AND
ASSOCIATED METHOD

Applicant: Austin W. Mutchler

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APPEAL BRIEF

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April 11, 2008

Date of Signature

This Appeal Brief is submitted electronically in support of the appeal from the Examiner's January 8, 2008 final rejection of claims 1-5 and 7-32, and is submitted within two months of the April 7, 2008 filing date of the Notice of Appeal. Please charge Deposit Account No. 10-0750 with reference to our matter DEP5031 in the amount of \$510.00 for the fee to file this Appeal Brief. It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees be charged, or any overpayment in fees be credited, to Account No. 10-0750 with reference to file DEP5031.

REAL PARTY IN INTEREST

The real party in interest is DePuy Products, Inc., the assignee, pursuant to an assignment recorded in the records of the U. S. Patent and Trademark Office at reel 014917, beginning at frame 0951.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants that will directly affect or be directly affected by, or have a bearing on the Board's decision in the present appeal.

STATUS OF CLAIMS

Claims 1-5 and 7-32 were finally rejected in the Office Action dated January 8, 2008.

Claim 6 has been cancelled.

Each of claims 1-5 and 7-32 is appealed.

A copy of pending claims 1-5 and 7-32 is attached hereto in an Appendix.

STATUS OF AMENDMENTS

Appellant has filed no amendments subsequent to the January 8, 2008 final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1:

Claim 1 is directed to an intramedullary nail, as shown in FIG. 7 at 400. The nail 400 has a body 402 with a longitudinal axis 416 (see, for example, FIG. 7; page 28, lines 27-28) and a continuous edge defining an aperture 418 (see, for example, page 28, lines 28-29). As shown in FIG. 8, the continuous edge has opposed straight part and curved parts. The opposed straight parts define a first portion (central section) 434 of the aperture 418 and the curved parts define two

cylindrical end portions 421, 422 of the aperture 418 (see, for example, FIGS. 7-9; page 30, line 30 - page 31, line 1-8).

The first portion 434 of the aperture 418 lies between the two cylindrical end portions 421, 422. (see, for example, FIGS. 7-9; page 30, line 30 - page 31, line 1-8). The two cylindrical end portions 421, 422 of the aperture 418 have widths greater than the distance between the opposed straight parts of the continuous edge defining the first portion 434 of the aperture 418. The aperture 418 is symmetrical about a longitudinal axis extending between the cylindrical portions 421, 422 and between the straight parts of the continuous edge (see, for example, FIGS. 8, 19 and 21A).

Generally, the aperture 418 accepts different types of fasteners for use in securing the nail to the surrounding bone in different ways. This uniquely-shaped aperture 418 allows the surgeon to select dynamic fixation (see, for example, FIGS. 15-16; page 35, lines 17-25), where the fastener and nail can move relative to each other so that the relative positions of the fastener and the nail can change after the fastener is inserted and to select static fixation (see, for example, FIG. 10; page 32, lines 20-21), where the relative positions of the fastener and the nail are fixed.

Independent Claim 11:

Claim 11 is directed to a kit 600 for use in orthopaedic surgery (see, for example, FIGS. 4A-4D, 23A; page 42, line 29 – page 43, line 5). The kit 600 includes an intramedullary nail 100, 400 and at least two fasteners 170, 174, 180, 184, 484, 480, 470 (see, for example, FIGS. 4A-4D and 23A; page 42, line 29 – page 43, line 5). Each of the fasteners 170, 174, 180, 184, 484, 480, 470 has a shank with a maximum outer diameter (see, for example, FIGS. 4A-4D and 23A). The intramedullary nail 100, 400 has a body 102, 402 with two ends 108, 112 and an edge defining an aperture 118, 318, 418 (see, for example, FIGS. 1, 8, 23A, 24-26; page 17, lines 1-11, 21-22; page 28, lines 14-15, 28-31). The edge includes two parallel parts that define a first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 1, 1A, 7, 7A-7D and 8; page 19, lines 6-8; page 30, lines 29-32; page 31, lines 9-11). The edge also includes a second curved part that extends from and is connected to the two parallel parts (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19, 21A; page 18, lines 3-4; page 19, lines 18-24; page 31, lines 1-17). The curved part of the edge defines a curved portion 122, 222, 421, 422 of the aperture 118, 318, 418 (see, for example, FIGS. 1, 1A, 7,

7A-7D and 8; page 18, lines 3-4; page 19, lines 18-24; page 31, lines 1-17). The aperture 118, 318, 418 is symmetrical about a longitudinal axis extending from the second curved portion and between the parallel parts (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19 and 21A). The curved portion of the aperture 118, 318, 418 has a width greater than the distance between the substantially parallel parts (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19 and 21A; page 31, lines 15-17). The maximum outer diameter of the shank of the first fastener is less than the distance between the substantially parallel parts of the edge defining the first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 4D, 16; page 24, lines 17-28; page 35, lines 17-25; page 36, lines 11-16). The first portion 134, 334, 434 of the aperture 118, 318, 418 is sized and shaped to cooperate with the first fastener (e.g. fastener 184) to provide dynamic fixation (see, for example, FIGS. 4D, 16; page 24, lines 17-28; page 35, lines 17-25; page 36, lines 11-16). The maximum outer diameter of the shank of the second fastener (e.g. fastener 170) is greater than the distance between the substantially parallel parts of the edge defining the first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 4A, 10-13, 13A; page 23, lines 24-31; page 32, lines 20-31; page 33, lines 1-7, 20-32; page 34, lines 21-29). Thus, the shank of the second fastener 170 will not fit within the first portion 134, 334, 434 of the aperture 118, 318, 418. However, the shank of the second fastener 170 will fit within the curved portion of the aperture 118, 318, 418: the curved portion of the aperture 118, 318, 418 is sized and shaped to cooperate with the second fastener 170 to provide either static fixation and dynamic fixation.

Independent Claim 21:

Claim 21 is directed to a method for use in orthopaedic surgery. The method includes providing an orthopaedic surgery kit 600 (see, for example, FIGS. 4A-4D, 23A; page 42, line 29 – page 43, line 5). The kit 600 includes an intramedullary nail 100, 400 and at least two fasteners 170, 174, 180, 184, 484, 480, 470 (see, for example, FIGS. 4A-4D and 23A; page 42, line 29 – page 43, line 5). Each of the fasteners 170, 174, 180, 184, 484, 480, 470 has a shank with a maximum outer diameter (see, for example, FIGS. 4A-4D and 23A). The intramedullary nail 100, 400 has a body 102, 402 with two ends 108, 112 and an edge defining an aperture 118, 318, 418 (see, for example, FIGS. 1, 8, 23A, 24-26; page 17, lines 1-11, 21-22; page 28, lines 14-15, 28-31). The edge includes two straight parallel parts that define a first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 1, 1A, 7, 7A-7D and 8; page 19, lines 6-8; page 30, lines 29-32; page 31, lines 9-

11). The aperture 118, 318, 418 also includes a second portion 122, 222, 421, 422 (see, for example, FIGS. 1, 1A, 7, 7A-7D and 8; page 18, lines 3-4; page 19, lines 18-24; page 31, lines 1-17). The maximum outer diameter of the shank of the first fastener (e.g. fastener 184) is less than the distance between the substantially parallel parts of the edge defining the first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 4D, 16; page 24, lines 17-28; page 35, lines 17-25; page 36, lines 11-16). The first portion 134, 334, 434 of the aperture 118, 318, 418 cooperates with the first fastener to provide dynamic fixation (see, for example, FIGS. 4D, 16; page 24, lines 17-28; page 35, lines 17-25; page 36, lines 11-16). The maximum outer diameter of the shank of the second fastener (e.g. fastener 170) is greater than the width of the first portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 4A, 10-13, 13A; page 23, lines 24-31; page 32, lines 20-31; page 33, lines 1-7, 20-32; page 34, lines 21-29). The second fastener (e.g. fastener 170) cooperates with the second portion 122, 222, 421, 422 of the aperture 118, 318, 418 to provide static fixation (see, for example, FIGS. 4A, 4B, 10; page 23, line 24- page 24, line 9; page 32, lines 20-31).

In the method of claim 21, the surgeon cuts an incision in the patient, prepares a bone cavity and inserts the intramedullary nail 100, 400 into the cavity. The surgeon chooses between static fixation and dynamic fixation and selects either the first fastener 184 or second fastener 170, based upon the choice of static fixation or dynamic fixation. If dynamic fixation is chosen, the first fastener 184 is secured between the parallel parts of the edge of the aperture 118, 318, 418. If static fixation is chosen, the second fastener 170 is secured in the second portion 122, 222, 421, 422 of the aperture 118, 318, 418.

Independent Claim 22:

Claim 22 is directed to a kit 600 for use in orthopaedic surgery (see, for example, FIGS. 4A-4D, 23A; page 42, line 29 – page 43, line 5). The kit 600 includes an intramedullary nail 100, 400 and at least three fasteners 170, 174, 180, 184, 484, 480, 470 (see, for example, FIGS. 4A-4D and 23A; page 23, line 24 – page 24, line 28; page 42, line 29 – page 43, line 5). Each of the fasteners 170, 174, 180, 184, 484, 480, 470 has a shank with a maximum outer diameter (see, for example, FIGS. 4A-4D and 23A). The intramedullary nail 100, 400 has a body 102, 402 with two ends 108, 112 and an edge defining an aperture 118, 318, 418 (see, for example, FIGS. 1, 8, 23A, 24-26; page 17, lines 1-11, 21-22; page 28, lines 14-15, 28-31). The edge includes two opposed straight parts

that define a constricted portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIGS. 1, 1A, 7, 7A-7D and 8; page 19, lines 6-8; page 30, lines 29-32; page 31, lines 9-11). The edge also includes a second curved part that extends more than 180° (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19, 21A; page 18, lines 3-4; page 19, lines 18-24; page 31, lines 1-17). The curved part of the edge defines an enlarged portion 122, 222, 421, 422 of the aperture 118, 318, 418 that is adjacent and connected to the constricted portion 134, 334, 434 (see, for example, FIGS. 1, 1A, 7, 7A-7D and 8; page 18, lines 3-4; page 19, lines 18-24; page 31, lines 1-17). The aperture 118, 318, 418 is symmetrical about a longitudinal axis extending through the enlarged portion and the constricted portion (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19 and 21A). The diameter of the enlarged portion 122, 222, 421, 422 of the aperture 118, 318, 418 is greater than the distance between the opposing parts of the edge defining the constricted portion 134, 334, 434 (see, for example, FIGS. 1, 1A, 7, 7A-7D, 8, 19 and 21A; page 31, lines 15-17). The maximum outer diameter of the shank of the first fastener (e.g. fastener 484) is less than the distance between the two opposing parts of the edge defining the constricted portion 134, 334, 434 of the aperture 118, 318, 418 (see, for example, FIG. 16; page 35, lines 17-25; page 35, lines 17-25) to allow for dynamic fixation when the first fastener 484 is used with the intramedullary nail (see, for example, FIG. 16; page 35, lines 17-25). The maximum outer diameter of the shank of the second fastener (e.g. fastener 470) is great enough to allow for static fixation when the second fastener is placed in the enlarged portion 122, 222, 421, 422 of the aperture 118, 318, 418 (see, for example, FIGS. 10-12; page 32, line 20 - page 33, line 27). The maximum outer diameter of the shank of the third fastener (e.g. fastener 480) is less than the maximum outer diameter of the shank of the second fastener (e.g. fastener 470) and greater than the distance between the two opposing parts of the edge defining the constricted portion of the aperture 134, 334, 434. (see, for example, FIGS. 13-14; page 34, line 21 – page 35, line 16). The first fastener 484 and the constricted portion 134, 334, 434 are sized to allow for dynamic fixation with a degree of relative movement allowable between bone parts (see, for example, FIG. 16; page 35, lines 17-25). The third fastener 480 and the enlarged portion 122, 222, 421, 422 are sized to allow for dynamic fixation with a lesser degree of relative movement allowable between bone parts (see, for example, FIGS. 13-14; page 34, line 21 – page 35, line 16).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

THIS APPEAL PRESENTS THREE GROUNDS OF REJECTION:

- I. WHETHER CLAIMS 1-5, 8, 10-16, 18, 20-27, 29, 31 AND 32 ARE UNPATENTABLE UNDER 35 U.S.C. §103 OVER ACKERET ET AL., U.S. PATENT NO. 6,319,253, IN VIEW OF SOHNGEN, U.S. PATENT PUBLICATION NO. 2003/0195515A;
- II. WHETHER CLAIM 7 IS PATENTABLE UNDER 35 U.S.C. §103 OVER ACKERET ET AL., U.S. PATENT NO. 6,319,253, IN VIEW OF EMILIO ET AL., U.S. PATENT NO. 5,814,047; AND
- III. WHETHER CLAIMS 9, 17, 19, 28 AND 30 ARE PATENTABLE UNDER 35 U.S.C. §103 OVER ACKERET ET AL., U.S. PATENT NO. 6,319,253, IN VIEW OF SOHNGEN, U.S. PATENT PUBLICATION NO. 2003/0195515A AND IN VIEW OF EMILIO ET AL., U.S. PATENT NO. 5,814,047.

ARGUMENT

- I. REJECTION OF CLAIMS 1-5, 8, 10-16, 18, 20-27, 29, 31 AND 32 UNDER 35 U.S.C. §103(A) OVER ACKERET ET AL. (U.S. PATENT NO. 6,319,253) IN VIEW OF SOHNGEN (U.S. PATENT PUBLICATION NO. 2003/0195515A) IS IMPROPER.

Claims 1-5, 8 and 10

The rejection of claim 1 recognizes that Ackeret et al. does not disclose a nail with an aperture that is symmetrical about a longitudinal axis between curved and straight parts of the edge of an aperture that includes the cylindrical and center portion as set forth in claim 1. The rejection points to Sohngen as teaching symmetry to allow “for a more even distribution of forces through the nail once it is emplaced within the bone,” and concludes that:

“It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have constructed the bore of Ackeret et al. as being symmetrical, since this would allow for a more even distribution of forces throughout the nail once it has been emplaced within the bone.”

However, the shape of the locking hole 1 in Ackeret et al. is dictated by its function. Ackeret et al. is concerned with allowing for use of spiral blades in a locking hole, and the locking hole is so configured. (col. 1, lines 35-37: “Thus, there exists a need for an improved intramedullary nail that

can be used with either locking screws or a spiral blade.”; col. 1, lines 50-52: “the locking hole is configured in such a manner that it allows a spiral blade to be inserted in it laterally and centrally.”). Locking hole 1 (including slot 6) of the Ackeret embodiments is accordingly shaped to accommodate spiral blades. These Ackeret locking slots are therefore not symmetrical. (see, e.g., FIGA. 1a, 3b, 4a, 5a). Nor does it appear that the Ackeret et al. locking slots would be capable of accommodating spiral blades if the shape was changed to make the slots symmetrical.

As set forth in MPEP §2143.01V: “If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).” This standard applies here: the proposed modification of the Ackeret et al. locking hole 1 to make it symmetrical would render the locking hole unsatisfactory to receive spiral blades. Accordingly, there is no suggestion or motivation to make the modification proposed by the Examiner, and the rejection of Claims 1-5, 8 and 10 under 35 USC §103 is improper.

Claims 11-16, 18, 20 and 32

Independent claim 11 calls for a nail having an aperture that is symmetrical about a longitudinal axis, with the aperture being defined by parallel portions and a curved portion, wherein the width of the curved portion is greater than the distance between the parallel parts. In addition, claim 11 calls for the orthopaedic surgical kit to include two fasteners, one having a shank with a maximum outer diameter less than the distance between the parallel parts of the edge defining the first portion of the aperture, and one having a shank with a maximum outer diameter greater than the distance between the parallel parts of the edge defining the first portion of the aperture.

As discussed above with respect to claim 1, the proposed modification of the Ackeret et al. locking hole 1 to make the entire locking hole symmetrical would render the locking hole unsatisfactory to receive spiral blades. Accordingly, there is no suggestion or motivation to make the modification proposed by the Examiner, and the rejection of claims 11-16, 18, 20 and 32 under 35 USC §103 is improper.

The rejection of claim 11 appears to be based on the view that it calls for a resorbable component. However, claim 11 does not call for a resorbable component.

Claim 11 calls for a fastener having a shank with a maximum outer diameter less than the distance between the parallel parts of the edge defining the aperture. Claim 11 also calls for another fastener having a shank with a maximum outer diameter greater than that of the first fastener. Claim 11 also calls for the maximum outer diameter of the second fastener to be greater than the distance between the substantially parallel parts of the edge. If one of ordinary skill in the art desired to allow for dynamic fixation in Ackeret et al. element 4 of Ackeret et al. (an “elongated passage”) would be suitable to accept a suitably sized screw; it would not be necessary to provide a fastener with a maximum outer diameter allowing it to fit within the slot 6 to allow for dynamic fixation in Ackeret et al. Accordingly, no motivation or suggestion is seen in Sohngen to provide a fastener with a maximum outer diameter less than the width of slot 6 in Ackeret et al., and the rejection of Claims 11-16, 18, 20 and 32 under 35 USC §103 is improper.

Claim 21

Claim 21 calls for a fastener having a shank with a maximum outer diameter less than the distance between the parallel parts of the edge defining an aperture and another fastener having a shank with a greater maximum outer diameter. The rejection takes the position that “it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have constructed the device of Ackeret et al. with a slot and fastener as taught by Sohngen, in order to allow the device of Ackeret et al. to provide dynamic fixation of an injured bone.” However, element 4 of Ackeret et al. (an “elongated passage”) would be suitable for dynamic fixation if one so desired; it would not be necessary to change the shape of slot 6 to allow for dynamic fixation, and it would not be necessary to provide a fastener with a maximum outer diameter allowing it to fit within the slot 6 to allow for dynamic fixation. Accordingly, no motivation or suggestion is seen in Sohngen to provide a fastener with a maximum outer diameter less than the width of slot 6 in Ackeret et al., and the rejection of claim 21 under 35 USC §103 is improper.

Claim 22-27, 29 and 31

Claim 22 calls for a kit with three fasteners having shanks with different maximum outer diameters. The first fastener has a shank with a maximum outer diameter that is less than the distance between two opposing parts of an edge defining a restricted portion of an aperture to allow

for dynamic fixation. The second fastener has a shank with a maximum outer diameter great enough to allow for static fixation when the fastener is placed in an enlarged portion of an aperture in an intramedullary nail. The third fastener has a shank with a maximum outer diameter that is less than the shank of the second fastener and greater than the shank of the first fastener and greater than the distance between the two opposing parts of the edge of the aperture. The aperture is symmetrical about an axis through the enlarged portion and constricted portion.

As discussed above with respect to claim 1, the proposed modification of the Ackeret et al. locking hole 1 to make the entire locking hole symmetrical would render the locking hole unsatisfactory to receive spiral blades. Accordingly, there is no suggestion or motivation to make the modification proposed by the Examiner, and the rejection of claims 22-27, 29 and 31 under 35 USC §103 is improper.

As discussed above, if Sohngen would have motivated one of ordinary skill in the art to modify Ackeret et al. to allow for dynamic fixation, that person could have provided a fastener that could fit within and be movable with respect to the elongated passage 4 of Ackeret et al.; it would not be necessary to provide a fastener with a maximum outer diameter allowing it to fit within the slot 6 to allow for dynamic fixation. Accordingly, no motivation or suggestion is seen in Sohngen to provide a fastener with a maximum outer diameter less than the width of slot 6 in Ackeret et al., and the rejection of claims 22-27, 29 and 31 under 35 USC §103 is improper.

In addition, neither Sohngen nor Ackeret et al. are seen to disclose or suggest the desirability of providing two degrees of dynamic fixation: a degree of relative movement when the first fastener is placed within the constricted portion of the aperture and a lesser degree of relative movement when the third fastener is placed in the enlarged portion of the aperture. Accordingly, no motivation or suggestion is seen in Sohngen to provide three such fasteners, and the rejection of claims 22-27, 29 and 31 under 35 USC §103 is improper.

II. REJECTION OF CLAIM 7 UNDER 35 U.S.C. §103(A) OVER ACKERET ET AL. (U.S. PATENT NO. 6,319,253) IN VIEW OF EMILIO ET AL. (U.S. PATENT NO. 5,814,047) IS IMPROPER.

Claim 7 depends on claim 1 and is therefore patentable for the reasons set forth above with respect to claim 1.

III. REJECTION OF CLAIMS 9, 17, 19, 28 AND 30 UNDER 35 U.S.C. §103(A) OVER ACKERET ET AL. (U.S. PATENT NO. 6,319,253) IN VIEW OF SOHNGEN (U.S. PATENT PUBLICATION NO. 2003/0195515A) AND IN VIEW OF EMILIO ET AL. (U.S. PATENT NO. 5,814,047) IS IMPROPER.

Claim 9 depends on claim 1 and is therefore patentable for the reasons set forth above with respect to claim 1.

Claim 17 depends on claim 11 and is therefore patentable for the reasons set forth above with respect to claim 1.

Claims 28 and 30 depend on claim 22 and are therefore patentable for the reasons set forth above with respect to claim 1.

IV. SUMMARY CONCLUSIONS

Therefore, in view of the arguments presented above, it is submitted that the 35 U.S.C. §103(a) rejection of claims 1-5, 8, 10-16, 18, 20-27, 29, 31 and 32 based on Ackeret et al., U.S. Patent No. 6,319,253, in view of Sohngen, U.S. Patent Publication No. 2003/0195515A1 is erroneous. And since claims 7, 9, 17, 19, 28 and 30 depend on patentable independent claims 1, 11 and 22, the rejection of these dependent claims is likewise erroneous.

The Board is thus urged to reverse these rejections. Such action is respectfully requested.

Respectfully submitted,

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CLAIMS APPENDIX: APPEALED PENDING CLAIMS OF THE PRESENT APPLICATION

1. An intramedullary nail for use with a first fastener and a second fastener for use in orthopaedic surgery, said nail comprising a body defining a longitudinal axis thereof, the body having a continuous edge defining an aperture therethrough, the continuous edge having opposed straight parts and a curved parts, the aperture having a first portion defined by the opposed straight parts of the continuous edge for cooperation with the first fastener to provide dynamic fixation and having two spaced cylindrical end portions defined by the curved parts of the continuous edge for cooperation with the second fastener to provide static fixation, the first portion of the aperture lying between the cylindrical portions of the aperture, the cylindrical portions of the aperture having widths greater than the distance between the opposed straight parts of the continuous edge defining the first portion of the aperture, the aperture being symmetrical about a longitudinal axis extending between the cylindrical portions and between the straight parts of the edge.

2. The intramedullary nail of claim 1, wherein the opposed straight parts of the continuous edge define a rectangular central section.

3. The intramedullary nail of claim 2, wherein the cylindrical end sections are adapted to matingly fit with the first fastener.

4. The intramedullary nail of claim 2, wherein the cylindrical end sections are adapted to one of slidable fit and threadable fit with the first fastener.

5. The intramedullary nail of claim 1, wherein the aperture is adapted to provide for a slidable fit of the first fastener with said body along the longitudinal axis of said body.

6. (canceled)

7. The intramedullary nail of claim 1:
wherein said body adjacent the first mentioned cylindrical end defines internal threads therein; and

wherein said body adjacent the second cylindrical end defines internal threads therein.

8. The intramedullary nail of claim 1, further comprising a resorbable component received within one of the cylindrical portions of the aperture and engaging the parts of the edge defining the cylindrical portion of the aperture.

9. The intramedullary nail of claim 8:
wherein said body comprises internal threads formed in the body adjacent the aperture; and
wherein said resorbable component comprises external threads formed thereon for cooperation with internal threads of said body.

10. The intramedullary nail of claim 1, wherein the aperture defines a slot axis thereof, the slot axis being perpendicular to the longitudinal axis of said body.

11. A kit for use in orthopaedic surgery, the kit comprising:

- a first fastener comprising a shank having maximum outer diameter;
- a second fastener comprising a shank having a maximum outer diameter; and
- an intramedullary nail comprising a body having two ends and an edge defining an aperture therethrough, the edge being spaced from the two ends and including first substantially parallel parts defining a first portion of the aperture sized and shaped to cooperate with said first fastener to provide dynamic fixation and a second curved part extending from and connected to said first substantially parallel parts defining a curved portion of the aperture sized and shaped to cooperate with said second fastener to provide one of static fixation and dynamic fixation, the second curved portion of the aperture having a width greater than the distance between the first substantially parallel parts of the edge defining the first portion of the aperture, the aperture being symmetrical about a longitudinal axis extending from the second curved portion and between the substantially parallel parts;

wherein the maximum outer diameter of the shank of the first fastener is less than the distance between the first substantially parallel parts of the edge defining the first portion of the aperture; and

wherein the maximum outer diameter of the shank of the second fastener is greater than the distance between the first substantially parallel parts of the edge defining the first portion of the aperture.

12. The kit of claim 11, wherein the first substantially parallel edges of the aperture define a rectangular central section and the second curved portion of the aperture defines a cylindrical end section adjoining the rectangular central section.

13. The kit of claim 12, wherein the cylindrical end section is adapted to matingly fit with the second fastener.

14. The kit of claim 12, wherein the cylindrical end section is adapted to one of slidable fit and threadable fit with the second fastener.

15. The kit of claim 11, wherein the body has a longitudinal axis extending through at least one of the ends of the body and wherein the aperture is adapted to provide for a slidable fit of the first fastener with said body along the longitudinal axis of said body.

16. The kit of claim 12, wherein the aperture further includes a second cylindrical end section opposed to the first mentioned cylindrical end section.

17. The kit of claim 16:
wherein said body adjacent the first mentioned cylindrical end defines internal threads therein; and
wherein said body adjacent the second cylindrical end defines internal threads therein.

18. The kit of claim 11, further comprising a resorbable component for cooperation with said body adjacent the aperture.

19. The kit of claim 18:

wherein said body comprises internal threads formed in the body adjacent the aperture; and
wherein said resorbable component comprises external threads formed thereon for
cooperation with the internal threads of said body.

20. The kit of claim 11, wherein the aperture defines a slot axis thereof, the slot axis
being perpendicular to the longitudinal axis of said body.

21. A method for use in orthopaedic surgery comprising:
providing an orthopaedic surgery kit including a first fastener comprising a shank having a
maximum outer diameter, a second fastener comprising a shank having a maximum outer diameter
greater than the maximum outer diameter of the first fastener, and an intramedullary nail having a
body defining a longitudinal axis thereof, the body having an edge defining an aperture therethrough,
the aperture having a first portion for cooperation with the first fastener to provide dynamic fixation
and having a second portion extending from and connected to the first portion for cooperation with
the second fastener to provide static fixation, the edge continuing around and defining both the first
and second portions of the aperture, the edge having straight parallel parts defining the first portion
of the aperture, the maximum outer diameter of the first fastener being less than the distance
between the straight parallel parts of the edge;

cutting an incision in the patient;

preparing a bone cavity;

inserting the nail into the cavity;

choosing one of static fixation and dynamic fixation for the surgery;

selecting one of the first fastener and the second fastener based on the choice of one of static fixation and dynamic fixation for the surgery; and

securing the chosen one of the first fastener and the second fastener into the nail, wherein the maximum outer diameter of the second fastener is greater than the width of the first portion of the aperture, and wherein the first fastener is secured between the straight parallel parts of the edge in the first portion of the aperture if dynamic fixation is chosen and the second fastener is secured in the second portion of the aperture if static fixation is chosen.

22. A kit for use in orthopaedic surgery, the kit comprising a first fastener including a shank having a maximum outer diameter, a second fastener including a shank having a maximum outer diameter, a third fastener including a shank having a maximum outer diameter, and an intramedullary nail comprising: a body having a first end, a second end and an edge defining an aperture therethrough, the edge defining the aperture being spaced from the first and second ends and having a curved part and opposed straight parts, the curved part of the edge extending for more than 180 degrees, the aperture defining an enlarged portion thereof along the curved edge, the enlarged portion having a diameter, the aperture having a constricted portion adjacent and connected to the enlarged portion defined by the two opposing straight parts of the edge, the diameter of the enlarged portion being greater than the distance between the two opposing parts of the edge defining the constricted portion of the aperture, the aperture being symmetrical about an axis through the enlarged portion and constricted portion;

wherein the maximum outer diameter of the shank of the first fastener is less than the distance between the two opposing parts of the edge defining the constricted portion of the aperture to allow for dynamic fixation when the first fastener is used with the intramedullary nail;

wherein the maximum outer diameter of the shank of the second fastener is great enough to allow for static fixation when the second fastener is placed in the enlarged portion of the aperture;

wherein the maximum outer diameter of the shank of the third fastener is less than the maximum outer diameter of the shank of the second fastener and greater than the distance between the two opposing parts of the edge defining the constricted portion of the aperture;

wherein the first fastener and the constricted portion of the aperture are sized to allow for dynamic fixation with a degree of relative movement allowable between bone parts and the third fastener and the enlarged portion of the aperture are sized to allow for dynamic fixation with a lesser degree of relative movement allowable between bone parts.

23. The intramedullary nail of claim 22:

wherein the aperture has a rectangular central section; and

wherein the enlarged portion is in the form of a generally cylindrical section and is positioned adjacent an end of the rectangular central section of the aperture.

24. The intramedullary nail of claim 23:

wherein the cylindrical section of said body is adapted to matingly fit with said second fastener.

25. The intramedullary nail of claim 24, wherein the cylindrical section is adapted to slidably fit with said first and third fasteners and threadably fit with said second fastener.

26. The intramedullary nail of claim 24, wherein the body has a longitudinal axis extending through at least one of the first and second ends and wherein the aperture is adapted to provide for a slidable fit of said fastener with said body along the longitudinal axis of said body.

27. The intramedullary nail of claim 23, wherein the aperture further includes a second enlarged cylindrical section opposed to the first mentioned cylindrical section.

28. The intramedullary nail of claim 27:
wherein said body adjacent the first mentioned cylindrical section defines internal threads therein; and

wherein said body adjacent the second cylindrical section defines internal threads therein.

29. The intramedullary nail of claim 22, further comprising a resorbable component for cooperation with said body adjacent the aperture.

30. The intramedullary nail of claim 29:
wherein said body comprises internal threads formed in the body adjacent the aperture; and
wherein said resorbable component comprises external threads formed thereon for cooperation with the internal threads of said body.

31. The intramedullary nail of claim 22, wherein the enlarged portion is adjacent an end of the aperture.

32. The kit of claim 11 further comprising a third fastener including a shank having a maximum outer diameter less than the width of the curved portion of the aperture and greater than the distance between the first substantially parallel parts of the edge defining the first portion of the aperture.

EVIDENCE APPENDIX

Nothing is included with this appendix.

RELATED PROCEEDINGS APPENDIX

Nothing is included with this appendix.